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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/607,193	06/27/2003	Lev Ryzhikov	1857.0910001	5795

26111 7590 09/06/2005

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EXAMINER

PRITCHETT, JOSHUA L

ART UNIT PAPER NUMBER

2872

DATE MAILED: 09/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

H.A

Office Action Summary	Application No. 10/607,193	Applicant(s) RYZHIKOV ET AL.	
	Examiner Joshua L. Pritchett	Art Unit 2872	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 18-26 and 28-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 18-26 and 28-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This action is in response to Request for Continued Examination and Amendment filed July 15, 2005. Claims 18 and 28 have been amended, claim 27 has been cancelled and claims 29 and 30 have been added as requested by the applicant.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 18, 19, 21-26 and 28-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schultz (WO 98/28644) in view of Fujimoto (US 2003/0053218). For text citations patent Schultz (US 6,366,410), which is a national stage of the PCT that WO 98/28644, is used as a translation while the WIPO document is being translated.

Regarding claims 18, 29 and 30, Schultz teaches a pattern generator of a lithography system (col. 1 lines 8-10) having a first lens group (100) consisting of three lenses (Fig. 1); a second lens group (200) having at least one lens (Fig. 1) that receives the beam of radiation from the first lens group and controls characteristics of the beam of radiation at a pupil plane (claim

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26). Claim 26 states that the intermediate portion (200) has an optical power. Lens elements with optical power are used to correct aberrations in the image pattern. Schultz further teaches a third lens group (300) that receives the beam of radiation from the second lens group and controls field characteristics of the beam of radiation at a patterning device plane (Fig. 1). Fig. 1 shows that the third lens group of Schultz controls the size of the pattern on the plane (19) based on the focal length of the third lens group. Schultz teaches an aperture stop (8) positioned between the first and second lens groups (Fig. 1; col. 2 line 67) and a fold mirror (14) positioned between the second and third lens groups (Figs. 1 and 2; col. 3 lines 7-8). Schultz lacks specific reference to the third lens group containing only one lens and the first lens group decreasing the numerical aperture. Fujimoto teaches the use of a third lens group containing a single cemented lens (abstract). Fujimoto further teaches that decreasing the numerical aperture using the first lens group helps to reduce the aberrations in the pattern (para. 0053). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the Schultz invention include the cemented lens and reduction of the numerical aperture as taught by Fujimoto for the purpose of reducing the size of the system by cementing the lenses in the third lens group together, thus forming a single lens and reducing the space occupied by the third lens group.

Regarding claim 19, Schultz teaches the second lens group consists of two lenses (Fig. 1).

Regarding claim 21, Schultz teaches one of the lenses in the first lens group is a meniscus lens (Fig. 1).

Regarding claim 22, Schultz teaches two of the three lenses in the first lens group of biconvex lenses (Fig. 1).

Regarding claim 23, Schultz teaches one of the two biconvex lenses has an aspherical surface (col. 3 lines 3-5).

Regarding claim 24, Schultz teaches at least one lens in the second lens group has an aspherical surface (col. 3 lines 3-5).

Regarding claim 25, Schultz teaches at least one lens in the second lens group has at least one convex surface (Fig. 1).

Regarding claim 26, Schultz teaches the single lens in the third lens group comprises two spherical surfaces (col. 3 lines 3-5). Lenses in the art are assumed to be spherical unless otherwise indicated. There is no indication in the Schultz reference that either surface (15 or 16) are aspherical.

Regarding claim 28, Schultz teaches a light source (50) positioned before the first, second and third lens groups (Fig. 2); and a pattern generator (330) positioned after the third lens group (Fig. 2).

Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schultz (WO 98/28644) in view of Fujimoto as applied to claim 18 above, further in view of Schultz (US 2002/0036832).

Schultz '644 in combination with Fujimoto teaches the invention as claimed but lacks reference to the use of three lenses in the second lens group. Schultz '832 teaches the use of a second lens group (705) with three lenses (Fig. 7). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have the Schultz '644 invention

include three lenses in the second group as taught by Schultz '832 for the purpose of more precisely relaying the incident light to the pattern generator.

Response to Arguments

Applicant's arguments filed July 15, 2005 have been fully considered but they are not persuasive.

On page 5 of Amendment applicant argues that Fujimoto reference fails to teach or suggest a third lens group having a single lens. The Fujimoto reference teaches a third lens group having a cemented pair of lenses. The examiner considers the broadest reasonable interpretation of "a single lens element" to read on a cemented lens pair. Further the reasonable regrouping of lenses in an optical train is within the ability of one of ordinary skill in the art.

On page 5 of Amendment applicant argues that the prior art fails to teach the newly added claim limitations. The newly added limitations regarding the function of the three lens groups are taught by the prior art in the manner discussed in the rejection above.

Conclusion

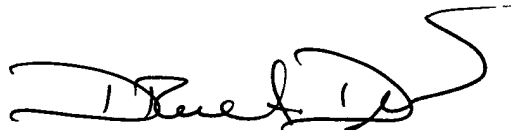
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joshua L. Pritchett whose telephone number is 571-272-2318. The examiner can normally be reached on Monday - Friday 7:00 - 3:30.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew A. Dunn can be reached on 571-272-2312. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JLP



DREW A. DUNN
SUPERVISORY PATENT EXAMINER